

Facts - Deck Lifting & Assembly

- The average deck section weighs 450 tons and measures 120 feet long, 78 feet wide and 30 feet deep.
- The weight of the first deck section, along with the weight of the two gantry cranes lifting it into place, will cause the main suspension cables to deflect 12 feet vertically in length. This change will cause a rather dramatic change in the two suspension cables' geometry. The weight of the first deck section will create a "v" shape at midspan that will be in place until sidespan deck sections are installed, which will act as counterweights to the middle deck sections.
- The weight of all 46 deck sections will pull the alignment of the main cables about 25 feet lower than their current, unweighted, profile. This stretching process will place the new bridge deck at the same level as the existing bridge deck.
- The new bridge deck will have only two expansion joints - one on the east side and one on the west side. Each will allow up to 30 inches of bridge deck movement. That movement can be caused by thermal (temperature) changes, seismic events, wind, and even forces generated by vehicles braking and accelerating on the bridge. That configuration is in contrast to the existing bridge deck, which has large expansion joints at each tower and smaller expansion joints every 120 feet along the length of the deck.
- The completed bridge deck is 5,400 feet long. The 46 deck sections that make up the bridge deck were pre-assembled in Korea before being shipped to the Narrows. The final deck sections fit within 1/8" of the initial engineering plans.
- Two different types of gantry cranes will be used to hoist the bridge deck sections into place. On the side spans, the gantries' lifting mechanisms are winches located on the caissons. In the mid-span area, the gantry cranes lift the sections using strand jacks located on the gantries' main girders.
- The tug and barge that will position deck sections for lifting are specially outfitted for the job. The tug has a global positioning satellite (GPS) unit to precisely navigate, and the barge has four barge thrusters to keep it exactly positioned throughout the deck lifting process.

(Continued from front page)

all marine traffic. Mariners are encouraged to stay informed of deck-lifting activities and the accompanying marine restrictions by visiting tacomanarrows-bridge.com. Marine restrictions will be in place not only around the *SWAN* itself, but also around the barge *MAR-MAC* and around gantry cranes and other equipment.



Eastside span gantry cranes used in deck lifting operations



Paving operations of the 24th Street on-ramp

Media Relations & Public Outreach

- Hosted project presentation and field trip to a contingent of Japanese bridge engineers
- Gave GOOD TO GO! electronic toll presentation to employees at Tacoma Community College
- Hosted joint media event with Coast Guard about marine restrictions during deck-lifting operations.
- Gave project interviews to two public access programs: Channel 22 and Clover Park Technical College.
- Gave project presentation to Kent Rotary Club.



View of manual toll lane during testing

Toll Operations

June

- Reviewed and approved Commissioning Test Scripts
- Performed "Over the Shoulder" reviews of Commissioning Test pre-runs
- Coordinated with other state agencies on commissioning testing

July

- Continue "Over the Shoulder" reviews of Commissioning Test pre-runs
- Coordinate Citizen's Advisory Committee orientation meeting



Vehicles in queue for manual toll lane testing

WSDOT Tacoma Narrows Bridge Office

3214 50th Street Court NW, Suite 302

Gig Harbor, WA 98335

Phone: 1-877-7NARROW or (253) 534-4640

Rick Singer, Business Manager, 253-534-4647

Filiz Satir, Community Outreach (253) 534-4670

Claudia Cornish, Media Relations (253) 534-4646

For more information about the bridge project, visit the TNB web site:

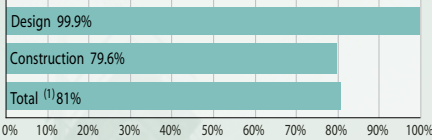
www.tacomanarrowsbridge.com



Washington State Department of Transportation

Progress to Date

(% Complete)



(1) Weighted 7% Design progress and 93% Construction progress

New Bridge Statistics:

Bridge Length: 5,400 ft. (overall)

Main Span: 2,800 ft. (tower to tower)
69 pairs of suspender hangers per side

Side Span, East: 1,200 ft.
29 pairs of suspender hangers per side

Side Span, West: 1,400 ft.
34 pairs of suspender hangers per side

Suspended Roadway:

(deck panels, barriers, utilities)

- 53 million lbs.
- 46 deck sections
- 120-ft. by 78-ft. is size of average section

Towers: 510 ft. tall

- 8,500 cubic yds. concrete (per tower)
- 2.9 million lbs. of reinforcing steel (both)

Caissons (tower foundations, each):

- 85,000 tons (total weight)
- 6 million lbs. of reinforcing steel
- 40,500 cubic yds. concrete (Tacoma)
- 37,000 cubic yds. concrete (Gig Harbor)

Anchorage (each):

- 81 million lbs. (total)
- 20,000 cubic yds. concrete
- 1 million lbs. of reinforcing steel

Cable Diameter (each): 20.5 inches

- Cable contains 19 strands of 464 wires
- Total steel wires per cable is 8,816
- Each steel wire is the diameter of a pencil

Structural Steel, Superstructure:

(Parts of the bridge above water)

35.5 million lbs.

Structural Steel, Suspension System:

(Cable wire and saddles atop towers)

12 million lbs.

New Parallel Bridge Completed: Early 2007

1950 Bridge (Retrofit) Completed: Early 2008

Tacoma Narrows Bridge Project Monthly Progress Report

June 2006



Arrival of the "Swan" into Puget Sound and final destination under the Tacoma Narrows Bridge

Deck sections arrive in the Narrows

Taking advantage of low tidal changes and currents, design-builder Tacoma Narrows Constructors (TNC) relocated the *SWAN* from Commencement Bay to the site of the new Tacoma Narrows Bridge during pre-dawn the hours of June 29. The ship arrived at the bridge site around 3:30 a.m., where crews spent the next few hours mooring it under the bridge's west side span. The *SWAN* will remain in its new temporary home through August while its 16 bridge deck sections are hoisted into place.

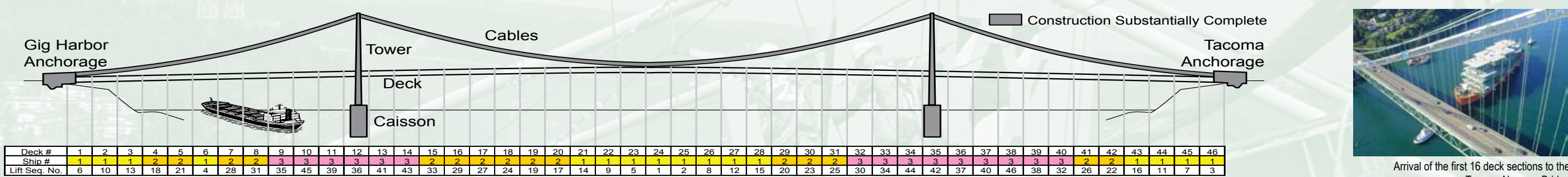
Assembling the new bridge deck starts the final chapter of the 5½-year construction story of the new Tacoma Narrows Bridge. The entire deck-lifting process will take about four months to complete and includes three separate deliveries of deck sections to the Narrows. The deck sections will be lifted into place with gantry cranes that straddle the bridge's two main suspension cables.

TNC plans to lift the first deck section exactly in the middle of the bridge during a slack tide period in July. The remaining 45 deck sections will be lifted in an order that, to the casual observer, may appear almost random. It will be anything but. The non-linear order of lifting the deck sections is designed to maintain equal stresses on the bridge's two towers, which will pull the towers back to a plumb vertical position. (People following the progress of the tower construction may recall that TNC used large cables to pull both tower tops back about two feet toward the shore. They did that because the weight of the new deck sections will pull the towers toward each other and back to a perfectly vertical alignment.)

While the *SWAN* is moored at the bridge site, the west side span will be closed to

(Continued on back page)

Bridge Progress



Bridge Progress

The ship carrying the first 16 deck sections arrived and anchored below the west side span of the new bridge. The second ship, *TEAL*, completely loaded with the next 15 deck sections, left Korea.

TNC installed the gantry cranes for the east and west side spans and installed one of the two on both the east and west main span. The main span gantries are moving toward the center span, preparing to lift the first deck section.

TNC has installed the transshipping lifting devices on the main cable in the west side span and began to install the cable used to lift the deck sections off of the ship and on to a barge. TNC continued to install additional temporary cable bands and suspender ropes used to move the deck sections to the anchorages. TNC began to grade the area in front of the existing east anchorage to install the dolly system used to move the deck sections to the anchorage.

Activities scheduled for July include:

- Completing assembly of the remaining gantry cranes in the main span
- Lifting the first few deck sections
- Finishing concrete on the Tacoma tower
- Finish installing suspender ropes on north cable

Milestone Outlook

Milestone	Contract	WSDOT Forecast	Months Ahead
Lift first deck unit	07 May 06	17 Jul 06	-2.4
Complete Superstructure joining of deck sections	03 Dec 06	08 Jan 07	-1.2
Toll System complete and functional	01 Jun 06*	01 Sept 06	-3.2
Complete new bridge and open to traffic	02 Apr 07	02 Jul 07**	-3.0
Complete existing bridge modifications	26 Feb 08	26 Feb 08	0.0

* Change order pending
** Currently under evaluation to identify areas of potential improvement

Roadway/Roadside Progress

In June, TNC paved the 24th St. eastbound on-ramp, worked on the electronic traffic system for the 24th on-ramp, continued construction of Wall 8, began clearing and grubbing for the Jackson Ave. eastbound off-ramp, and switched traffic into the permanent eastbound alignment. At the new east anchorage, TNC demolished the concrete pads supporting the spinning equipment and began the embankment construction for the bridge approach. At the existing east anchorage, TNC began welding the steel column casings for bent #7 and constructed the false works for the bent 8 upper walls.

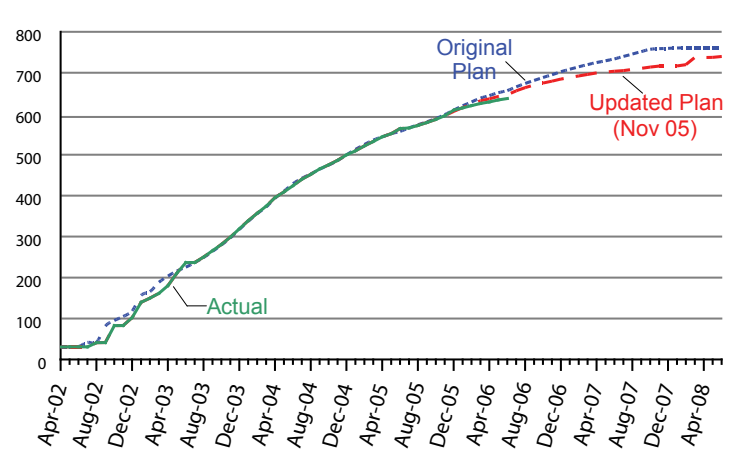
Activities scheduled for July include:

- Paving Gig Harbor mainline and 24th St. Ramp
- Pouring the bent 8 upper walls
- Pouring wall panels for Wall 8
- Welding steel column casing for bent 7
- Backfilling of east anchorage
- Beginning new Jackson Ave off-ramp alignment

Financial Status

Project Cost Summary (in Millions)	Budgeted	Expended
Design-Build Contract	\$615.0	\$556.3
Toll System Contract	9.2	7.5
WSDOT Oversight	41.0	21.1
Contingencies Committed	17.6	13.0
Contingencies Remaining	37.1	-
Phase I Dev. Cost (UIW)	40.5	39.8
Total	\$760.4	\$637.6
Total Expended/Total Cost	83.9%	

Project Cash Flow – Planned vs Actual Expenditures
April 2002 to June 2008 (Dollars in millions)

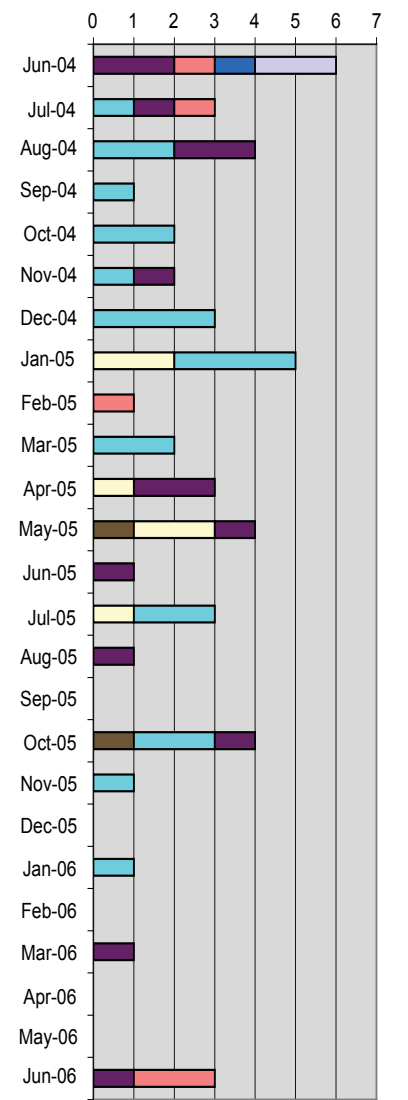


Contingency Funds Commitments

Right-of-Way/Other Settlements	\$5,964,696.30
Design Build Contract Executed Change Orders	
Community Driven Change Orders	\$2,888,891.00
Planned/Known Change Orders	\$1,845,577.98
Permit Driven Change Orders	\$372,404.14
Design/Builder Initiated Change Orders	-\$814,972.00
WSDOT Initiated Change Orders	\$5,773,260.23
Design Build Contract Sub-Total	\$10,065,161.35
Toll System Supply & Installation Contract Executed Change Orders	
Community Driven Change Orders	\$5,000.00
Planned/Known Change Orders	\$178,839.00
Permit Driven Change Orders	\$0.00
TransCore Initiated Change Orders	\$0.00
WSDOT Initiated Change Orders	\$233,636.00
Toll System Supply & Installation Contract Sub-Total	\$417,475.00
SR 16 ITS Work (Ramp Meters, Cameras, and Advisory Radio)	\$1,176,272.06
Contingency Funds Commitment Total	\$17,623,604.71

Environmental Performance

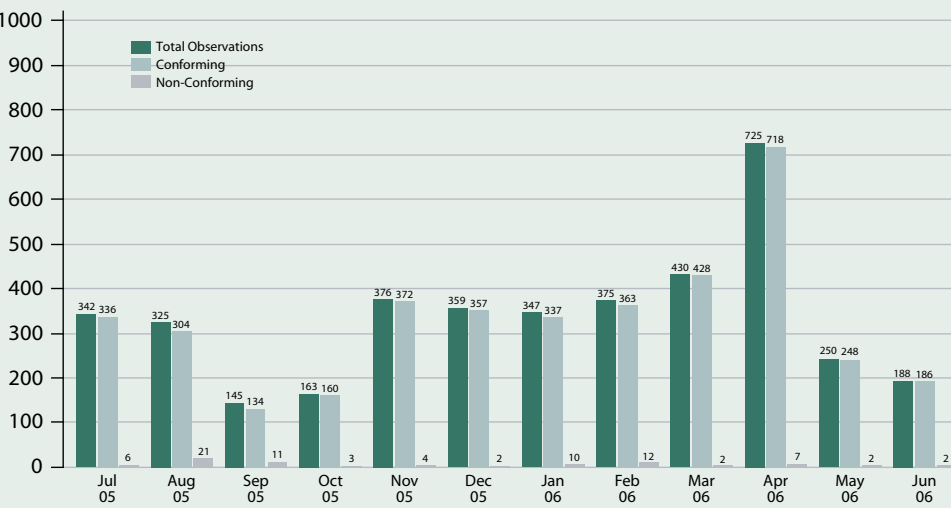
Tacoma Narrows Bridge Project
Environmental Incidents
June 2004 - June 2006



- "Administrative"
- Narrows & Concrete related
- Oil Sheen or release to Narrows
- Nighttime Noise
- W.Q. - Turbid Discharge
- Misc.
- Air Quality

Quality Performance

During June WSDOT staff completed the following audits:



WSDOT employs a Compliance Audit System to ensure that work on the project conforms to contract requirements. Compliance audits are conducted regularly in two areas: construction activities occurring in the field, and management policies and systems designed to ensure a quality product.

Compliance Audit System findings for the month of April are as follows;

- 22 individual audits of design/builders work activities
- 188 contractual requirements observed and verified for compliance
- 2 non-conformance findings
- 26 total outstanding non-conformance findings

The 26 outstanding non-conformances are within normal expectations for a project of this size. WSDOT continues to actively resolve the non-conformance issues with the design-builder. The overall audit findings continue to indicate the construction work is generally complying with contract requirements.

Safety Performance

2,357,659 hours with one lost-time accident.

June 06	Hours Worked	Recordable Cases	LWD Cases	Lost Workdays	Restricted Cases	Restricted Days	Fatalities
TNC	50,658	3	0	0	0	0	0
WSDOT	5,114	0	0	0	0	0	0
Total	65,052	3	0	0	0	0	0
Project to Date							
TNC	2,110,488	27	1	22	7	215	0
WSDOT	247,171	1	0	0	0	0	0
Total	2,357,659	28	1	22	7	215	0

The three recordable incidences were a worker who lacerated a hand while moving a bottle cart; a worker who chipped a tooth after bumping into a steel beam while walking on the catwalk; and a worker who lacerated a hand while changing a wire wheel on a hand grinder